

9 August 1968

25X1

TITLE: Image Analysis Program

Report # TO-B 67-20 on Image Analysis
dated 21 April 1967

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WORK PROGRAM: Carry Out Infectious Development Experiments Consisting of Counting The Undeveloped Silver Halide Crystals Remaining In an Exposed, D-19 Developed, Unfixed, 21 Step Tablet of Sub-Mono Grain Layer Model Emulsion Number N-2-0056

PROCEDURE:

1. Make photomicrographs and print on 8 x 10 matt paper at 1700x most steps of a 21 step density tablet of sub-mono grain layer model emulsion number N-2-0056, that has been exposed to the light of a sensitometer, developed in D-19 for 5 minutes at 68°F, treated with Eastman Kodak Co. short stop solution, washed thoroughly in running water for 30 minutes, with 3 minutes immersion in E.K. Co. Photo Flo Solution and hung up to dry (without swabbing). This special film is not fixed in the usual hypo clearing solution.
2. Ignoring totally black grains, count total number of single (isolated) undeveloped grains and then the total number of undeveloped grains. Express the singles as a percentage of the total.
3. Plot percent singles as some function of exposure. Plot percent singles as a function of the percentage of all grains developed.
4. Any change in percent singles represent a development Bias which arises from their difference in environment. The difference is a measure of the infectiousness of development.

Work To Follow The Above Experiment:

Two additional step tablets were exposed identically to that mentioned above. One was developed in D-11 for 6 min. at 68°F and one was developed in D-8 for 3 min. at 68°F. Similar photomicrographs will be made of each of these step tablets and counted as outlined above to relate infectiousness to specific aspects or types of developer.

See Attachment 1 and 2.

IMAGE ANALYSIS EXPERIMENT

EMUL. # N-2-0056

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	PHOTOMICROGRAPH PLATE NUMBER	21 STEP TABLET DENSITY STEP NUMBER	DENSITY READING	TOTAL UNDEVELOPED GRAINS COUNTED IN A GIVEN AREA AT 1700X	TOTAL ISOLATED SINGLE UNDEVELOPED GRAINS COUNTED IN A GIVEN AREA AT 1700X	TOTAL AVERAGE GRAINS COUNTED IN GIVEN AREA AT 1700X. EMULSION N-2-0056 UNDEVELOPED RAW FILM.	TOTAL DEVELOPED GRAINS IN A GIVEN AREA AT 1700X.	PERCENTAGE ISOLATED SINGLE UNDEVELOPED GRAINS COUNTED IN A GIVEN AREA AT 1700X.	PERCENTAGE OF TOTAL GRAINS DEVELOPED IN A GIVEN AREA AT 1700X.	
37%	11	4	.27	560	80	870	310	9.19%	36%	14.2
	11-A	4	.27	512	84	870	348	9.65%	40%	16.4
37%	12	5	.28	381	75	870	479	8.64%	55%	19.7
	12-A	5	.28	485	95	870	375	10.91%	43%	19.6
3%	13	6	.29	484	77	870	386	8.85%	44%	15.9
	13-A	6	.29	453	68	870	417	7.81%	48%	15.0
4%	14	7	.30	384	64	870	566	7.35%	65%	21.1
	14-A	7	.30	400	90	870	470	10.33%	54%	22.5
4%	15	8	.31	309	72	870	561	8.26%	64%	23.3
	15-A	8	.31	393	86	870	477	9.88%	55%	21.9
4%	16	9	.32	280	70	870	590	8.04%	68%	25
	16-A	9	.32	302	58	870	568	6.66%	65%	19.2
5%	17	10	.33	244	40	870	626	4.59%	72%	16.4
	17-A	10	.33	244	44	870	626	5.05%	72%	18
7%	18	11	.34	215	35	870	655	4.02%	75%	16.3
8%	19	12	.35	160	36	870	710	4.13%	82%	22.5
9%	20	13	.36	131	21	870	739	2.41%	85%	16
9%	21	14	.37	138	16	870	732	1.83%	84%	12
10%	22	15	.38	101	11	870	769	1.26%	88%	11
13%	23	16	.39	59	6	870	811	0.68%	93%	10

ATTACHMENT # 2.

IMAGE ANALYSIS EXPERIMENT

20 PHOTOMICROGRAPHS RECORDED
13 DENSITIES REPRESENTED

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